

ABSTRACT

The present inventions are directed to touch sensors with improved topological equivalence between an equipotential space and a Cartesian space to which the equipotential space will be mapped. The touch sensor comprises a

5 substrate with a touch region, and a set of electrodes that are electrically coupled to the touch region. The touch sensor further comprises a plurality of resistive band segments that frames the touch region. The electrodes are located between the resistive band segments. Each resistive band segment has a resistivity that is intermediate between the resistivity of the electrodes and the resistivity of the touch

10 region, thereby providing a transition between the low resistivity electrodes and the high resistivity touch region, and improving the topological equivalence within the corners of the touch region. At least one of the band segments has a non-uniform linear resistance to provide further improvement to the topological equivalence.